C

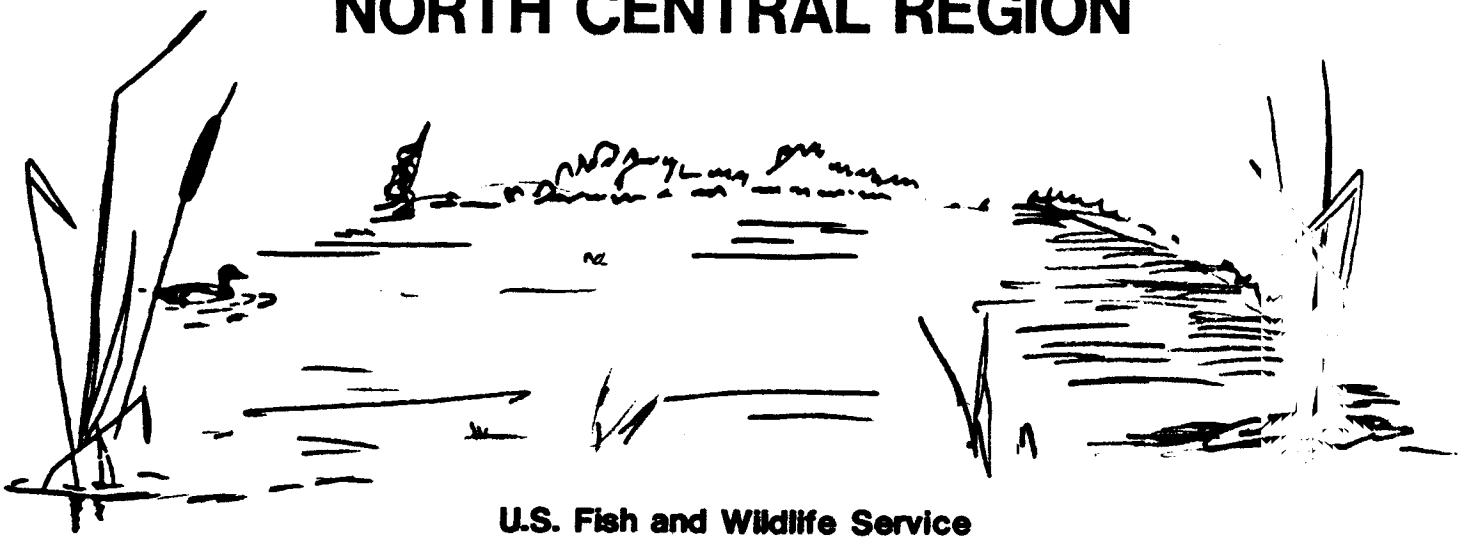
NATIONAL WETLAND INVENTORY USER REPORT 1:100,000 MAP AREA

MAP AREA: DETROIT NE

1:100,000 NAME: LAKE ST CLAIR NORTH

STATE: MICHIGAN

NORTH CENTRAL REGION



U.S. Fish and Wildlife Service

Federal Building, Fort Snelling Twin Cities, Minnesota 55111

USER REPORT
NATIONAL WETLAND INVENTORY
U.S. FISH AND WILDLIFE SERVICE
REGION 3

PREPARED BY

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USER CAUTION

Maps for this 1:100,000 scale map were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with Classification of Wetlands and Deepwater Habitats of the United States, Cowardin, et al., 1979. The aerial photographs reflect conditions during the specific year and season when they were taken. Some small wetlands and those obscured by dense forest cover may not be included on the map document. In addition, there is a margin of error inherent in the use and interpretation of aerial photographs. Thus a detailed on-the-ground and historical analysis of a single site may result in revision of the wetland boundaries established through photographic interpretation.

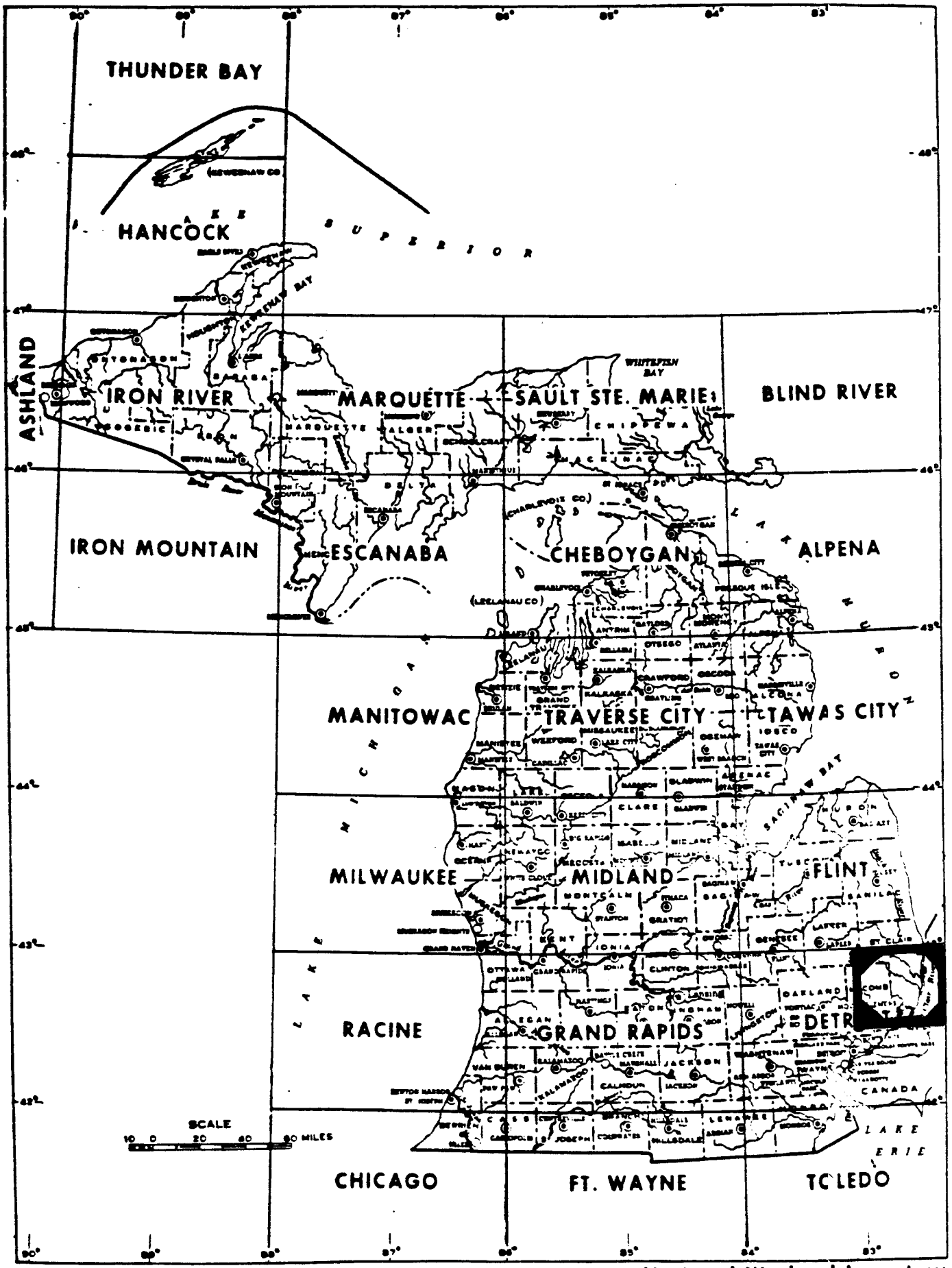
Federal, State, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either design or products of this inventory, to define limits of proprietary jurisdiction of any local, State, or Federal government or to establish the geographical scope of regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specific agency regulatory programs and propriety jurisdictions that may affect such activities.

Additional information regarding this map or other National Wetland Inventory activities may be obtained by contacting:

Regional Director, Region 3 (AH/TS)
Attn: Regional Wetlands Coordinator
United States Fish and Wildlife Service
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

Michigan Dept. of Natural Resources
Land Resources Program
Box 30028
Lansing, Michigan 48909

LOCATION OF REPORT
STATE OF MICHIGAN



U.S. Fish and Wildlife Service Region 3 National Wetland Inventory

DATE: January 1984

MAP PREPARATION

Basic Data

Photography Used:

Emulsion	Scale	Date	Percent Coverage
1. Black and white	1:80,000	November 1978	100%

Field Check Dates:

1. December 10, 1980

Contractor(s) for Photo Interpretation:

1. Michigan Dept. of Natural Resources

Collateral Data Used:

1. USGS topographic quad sheets
2. USDA Soil Surveys

Mapping Legend: (See Appendix D)

Farmed Wetlands

It is the policy of the Fish and Wildlife Service to not map farmed wetlands in the National Wetlands Inventory unless the wetland is a pothole-like depression, such as those found in the Prairie Pothole Region, intermittently flooded lake bottoms, cranberry bogs, or diked former tidelands in California. Therefore this map area may contain various amounts of non-depression type wetlands which were farmed on the date of the photography and intentionally not included in the inventory. Many of these omitted wetlands commonly occur in floodplains.

GEOGRAPHY

A. General Location

Degrees Longitude: 82° 0' to 83° 0' West

Degrees Latitude : 42° 30' to 43° 0' North

Largest City : Port Huron, Michigan

Detroit NE lies in southeastern Michigan, just northeast of the city of Detroit. The map area is bordered on the east by the St. Clair River and the Ontario, Canada border, and on the south by Lake St. Clair. This map includes parts of Macomb, St. Clair and Jasper Counties, and encompasses portions of the Lake Huron, Pine, Black and Clinton River watersheds. Lake St. Clair National Wildlife Refuge falls within the map boundaries.

B. Ecoregion

Bailey's Ecoregion Classification and Description (Bailey 1978):

Code: 2212L

Humid Temperate Domain (2000)
The entire Detroit NE map is in this Domain.

The climate of this Domain has strong seasonal temperatures and precipitation cycles, and a distinctive winter season. The Humid Temperate Domain comprises the humid midlatitude forests of broadleaf deciduous and needleleaf evergreen trees.

Hot Continental Division (2200)
All of the Detroit NE map area lies in this Division.

This Division characteristically has hot summers and cool winters. The natural vegetation is winter deciduous forest, where tall broadleaf trees dominate. These trees form a dense canopy in the summer, but lose their leaves in the winter. The shrub layer is weakly developed. A lush herbaceous layer develops in early spring, but diminishes as the dense tree canopy forms and shades the ground. Soils are primarily Alfisols, Inceptisols and Ultisols which are rich in humus and moderately leached.

Eastern Deciduous Forest Province (2210)
The entire Detroit NE map falls within this Province.

The vegetation of this Province represents a response to a climate that receives adequate precipitation all year long. Common tree species of the deciduous forests include beech (*Fagus grandifolia*), oak (*Quercus* spp.), birch (*Betula* spp.), basswood (*Tilia americana*), elm (*Ulmus* spp.), maple (*Acer* spp.) and ash (*Fraxinus* spp.). Pines (*Pinus* spp.) develop quickly in forests cleared for logging.

Tree species of poorly drained forests consist of alder (Alnus spp.), willow (Salix spp.), ash and elm.

Beech-Maple Forest Section (2212L)
This Section occurs in lowland areas, and covers all of the Detroit NE map.

Beech and maple trees form the principal plant association of this Section.

C. Topography and Land Forms

Hammond's Land Surface Form and Physical Subdivision (Hammond 1965, 1969):

Codes: (III-2) A1, (III-2) A2c, (III-3) B2b

Interior Physical Division (III) - The entire Detroit NE map area lies within this Physical Division.

East-Central Drift and Lake-bed Flats Subdivision (2) - This Subdivision covers 99% of the map area, all but the extreme west-central part.

North-Central Lake-Swamp-Moraine Plains (3) - This Subdivision covers less than 1% of Detroit NE, in the extreme west-central part of the map.

Flat Plains Class (A1) - This Class includes 60% of the map area extending from the southwest portion, adjacent to Lake St. Clair and the Canadian border. Over 80% of the land is in gentle slopes of less than 100 feet.

Smooth Plains Class (A2c) - This Class covers 40% of Detroit NE in the central and northwestern portions, excluding less than 1% in the extreme west-central part of the map. Over 80% of the land is in gentle slopes. Fifty to 75% of these slopes occur in uplands. Local relief ranges from 100 to 300 feet.

Irregular Plains Class (B2b) - This Class comprises less than 1% of the map area in the extreme west-central part of the map. Fifty to 80% of the land is in gentle slopes. Fifty to 75% of these slopes occur in lowland areas. Local relief ranges from 100 to 300 feet.

RESOURCES

A. Wetlands

No wetland acreage figure is available for the Detroit NE area at the present time.

Heavy wetland losses in the Detroit NE area have been attributed to agricultural drainage, industrial and urban development (Panzner 1955). Losses have been greatest in the north-central and northwestern portions of the map and in the southwest near Detroit. Wetland density in other portions of the map ranges from medium to high, with highest wetland concentration occurring just northeast of Lake St. Clair and west of Port Huron.

Wetlands which remain in the map area are fairly diverse and are located both in uplands and in river floodplains. Some of the most common wetland classes include saturated to semi-permanently flooded forested, scrub-shrub and emergents. Predominant trees and shrubs of the forested and forested/shrub wetlands include red maple (Acer rubrum), ash (Fraxinus spp.), willow (Salix sp.), dogwood (Cornus sp.) and alder (Alnus sp.). Rush (Juncus spp.), sedge (Carex spp.) bulrush (Scirpus spp.) and cattail (Typha latifolia) are important plant species of the emergent marshes. A list of plant species for other wetland types can be found in Appendix C.

Appendix A

REFERENCES

Bailey, R. G. 1978. Descriptions of the Ecoregions of the United States. USDA For. Serv. Intermtn. Reg. Ogden, Utah. 77 p.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U. S. Fish and Wildlife Service, Washington, D. C. FWS/OBS-79/31. 103 p.

Great Lakes Basin Commission. 1975a. Fish: Great Lakes Basin Comm. Great Lakes Basin Framework Study, App. 8. Ann Arbor, Mich. 290 p.

Hammond, E.H. 1965. 1:17,000,000 scale Physical Subdivisions. 1 map. p. 61. In Gerlach, A.C., ed. 1970. National Atlas of the United States of America. USDI Geol. Surv. Washington, D.C. 417 p.

----- 1969. 1:7,500,000 scale Classes of Land Surface Form. USDI Geol. Surv. 1 map. p. 62-63. In Gerlach, A.C., ed. 1970. National Atlas of the United States of America. USDI Geol. Surv. Washington, D.C. 417 p.

Herdendorf, C.E., S.M. Hartley, and M.D. Barnes, eds. 1981. Fish and Wildlife Resources of the Great Lakes Coastal Wetlands Within the United States. Volume four: Lake Huron. U.S. Fish and Wildlife Service, Washington, D.C. FWS/OBS-81/02-v4. 792 p.

ADDITIONAL INFORMATION

The purpose of this report is to provide general information regarding the production of the map and the wetlands found within the area of this map. It does not include descriptions of all wetlands found in the area nor complete species information. For additional information, the following reference is recommended:

Hammond, E. H. 1964. Analysis of Properties in Land Form Geography: An Application to Broad-scale Land Form Mapping. Annals, Assoc. Amer. Geog. v. 54. pp. 11-23.

Appendix B

SPECIAL MAPPING PROBLEMS

Problem 1: Extensive draining for agriculture made it difficult to distinguish wetland forests from upland forested areas.

Resolution: USDA Soil Surveys were used as collateral data. Field checking was done when possible.

Problem 2: Much of the area is undergoing rapid development. Many wetlands are being filled for housing and industry.

Resolution: Because of extensive drainage and the dynamic nature of the area, some areas shown as wetland on USGS topos are not visible on the photos. User should be aware of changing wetland conditions.

Problem 3: Canals and channels were not all mapped because the photo overlay would have been too complex.

Resolution: Some of the major intermittent streambeds that were not mapped will appear on the USGS topographic base map.

Problem 4: It was difficult to map the numerous dredged channels and small wetlands which occur among the filled areas on Harsens Island.

Resolution: Small wetlands were lumped into the predominant covertype. Wetland polygons reflect the predominant vegetative covertypes.

Problem 5: It was difficult to accurately identify specific water regimes form the 1:80,000 black and white photography.

Resolution: Combined water regimes (Z, W, Y) where necessary.

Appendix C

WETLAND COMMUNITIES

MAP SYMBOLS	LOCAL NAME	DOMINANT VEGETATION	WATER REGIME
PFOB PFO1B PFOY PFO1Y	Lowland hardwoods Swamp	Acer rubrum Fraxinus spp. Populus tremuloides Betula papyrifera	Saturated Seasonal
PFO/SSY	Swamp	Acer rubrum Alnus spp. Cornus spp. Salix spp. Populus tremuloides	Saturated Seasonal
PSSB PSSY PSS1Y	Swamp	Alnus spp. Cornus spp. Salix spp. Myrica Gale Cephalanthus occidentalis	Saturated Seasonal Semi-permanent
PSS/EMB PSS/EMY	Swamp	Alnus spp. Phalaris arundinacea Carex spp. Juncus spp. Salix spp.	Saturated Seasonal
PEMB PEMY	Wet meadow	Juncus spp. Carex spp. Scirpus spp.	Saturated Seasonal
PEMY	Marsh	Typha latifolia Potamogeton sp. Scirpus spp.	Seasonal Semi-permanent
PEMFh	Impoundment	Typha latifolia Scirpus spp.	Semi-permanent Artificial control
PEM/ABZ	Marsh	Typha latifolia Nuphar spp.	Permanent Intermittently exposed

Appendix D

NATIONAL WETLAND INVENTORY
Information and Legend
For Map Products

Classification System: The U.S. Fish and Wildlife Service uses the "Classification of Wetlands and Deepwater Habitats of the United States", December, 1979, by L. M. Cowardin, et al., to delineate and identify wetlands. This system is hierarchical and structured around a combination of ecological, biological, hydrological and substrate characteristics which permits universal use across the United States, its territories and possessions. It consists of five systems: Marine, Estuarine, Riverine, Lacustrine (lake) and Palustrine (swamps, bogs, marshes) and proceeds in a hierarchical manner through subsystem, class, and subclass. It also contains provisions to use water regime, water chemistry, soil, and special modifiers to provide additional levels of detail.

Figure 1 is an illustration of the classification system to the class level.

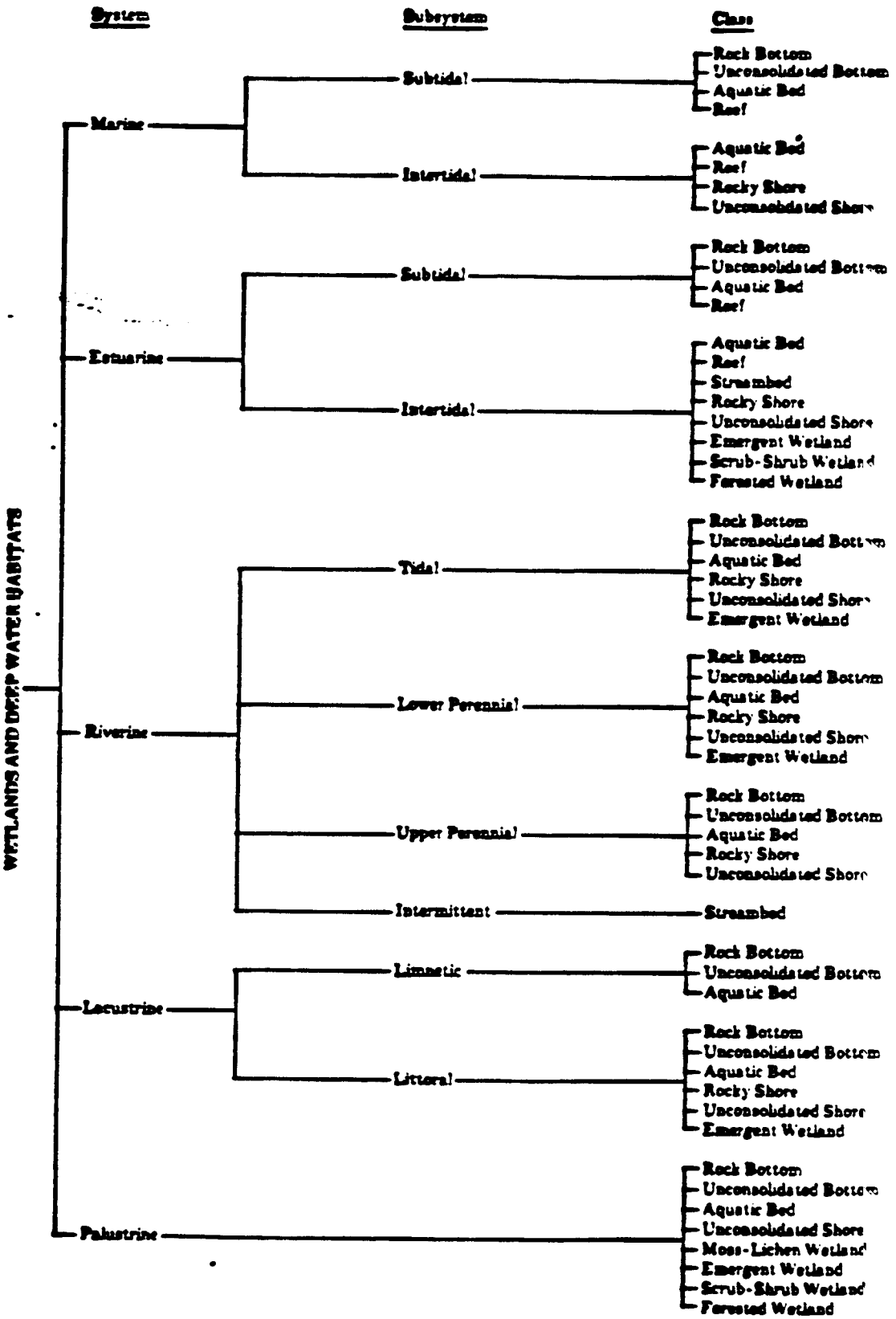


Fig 1. Classification hierarchy of wetlands and deepwater habitats, showing systems, subsystems, and classes The Palustrine System does not include deepwater habitats

Use of Wetland Legend: Wetland data are displayed on overlays or maps by a series of letters and numbers (alpha numerics) with the first letter representing the system and subsequent alpha numerics representing, in a sequential manner, the subordinate levels of detail down to the modifiers. Where classes and subclasses have been mixed, they are separated by a diagonal line.

Examples

a. Classification of wetlands to water regime and special modifier:

System:	Lacustrine
Subsystem:	Limnetic
Class:	Unconsolidated Bottom
Subclass:	Mud
Water Regime:	Intermittently Exposed
Special Modifier:	Diked/Impounded

L 1 UB 3 G h

b. Mixing of wetland classes and subclasses:
PFO2/EM1F = Palustrine, Forested, Needle-leaved deciduous (PFO2) mixed with Palustrine, Emergent, Persistent (PEM1) with semipermanent water regime (F).

WETLAND LEGEND*

- [ ] System
- [ ] Subsystem
- [M] Marine
  - [1] Subtidal
  - [2] Intertidal
- [E] Estuarine
  - [1] Subtidal
  - [2] Intertidal
- [P] Palustrine
  - [ ] No Subsystem
- [R] Riverine
  - [1] Tidal
  - [2] Lower Perennial
  - [3] Upper Perennial
  - [4] Intermittent
  - [5] Unknown Perennial**
- [L] Lacustrine
  - [1] Limnetic
  - [2] Littoral
- [U] Upland

*Should be used in conjunction with "Classification of Wetlands and Deepwater Habitats of the United States," by L. M. Cowardin et al.
**Not included in "Classification of Wetlands and Deepwater Habitats of the United States." Created specifically for National Wetland Inventory mapping effort.

Wetland Legend (continued)

[ ] Class

[ ] Subclass

CLASSES AND SUBCLASSES

- [AB] Aquatic Bed
  - [1] Algal
  - [2] Aquatic Moss
  - [3] Rooted Vascular
  - [4] Floating Vascular
  - [5] Unknown Submergent**
  - [6] Unknown Surface**
- [EM] Emergent
  - [1] Persistent
  - [2] Nonpersistent
- [FO] Forested
  - [1] Broad-Leaved Deciduous
  - [2] Needle-Leaved Deciduous
  - [3] Broad-Leaved Evergreen
  - [4] Needle-Leaved Evergreen
  - [5] Dead
  - [6] Deciduous**
  - [7] Evergreen**
- [ML] Moss/Lichen
  - [1] Moss
  - [2] Lichen
- [OW] Open Water/ Unknown Bottom**
- [RB] Rock Bottom
  - [1] Bedrock
  - [2] Rubble
- [RF] Reef
  - [1] Coral
  - [2] Mollusk
  - [3] Worm
- [RS] Rocky Shore
  - [1] Bedrock
  - [2] Rubble
- [SB] Streambed
  - [1] Bedrock
  - [2] Rubble
  - [3] Cobble/Gravel
  - [4] Sand
  - [5] Mud
  - [6] Organic
  - [7] Vegetated
- [SS] Scrub/Shrub
  - [1] Broad-Leaved Deciduous
  - [2] Needle-Leaved Deciduous
  - [3] Broad-Leaved Evergreen
  - [4] Needle-Leaved Evergreen
  - [5] Dead
  - [6] Deciduous**
  - [7] Evergreen**
- [UB] Unconsolidated Bottom
  - [1] Cobble/Gravel
  - [2] Sand
  - [3] Mud
  - [4] Organic
- [US] Unconsolidated Shore
  - [1] Cobble/Gra
  - [2] Sand
  - [3] Mud
  - [4] Organic
  - [5] Vegetated

**Not included in "Classification of Wetlands and Deepwater Habitats of the United States." Created specifically for National Wetland Inventory mapping efforts.

MODIFIERS TO WETLAND CLASSIFICATION

WATER REGIME MODIFIERS

Nontidal

A	Temporary
B	Saturated
C	Seasonal
D	Seasonally Flooded-Well Drained
E	Seasonally Flooded-Saturated
F	Semipermanent
G	Intermittently Exposed
H	Permanent
J	Intermittently Flooded

Nontidal Combined

Z	Intermittently Exposed/ Permanent (G,H above)**
W	Intermittently Flooded/ Temporary (A,J above)**
Y	Saturated Semipermanent/ All Seasonals (B,C,D,E F above)**

Nontidal and Tidal

U	Unknown**
K	Artificial

Tidal

L	Subtidal
M	Irregularly Exposed
N	Regularly Flooded
P	Irregularly Flooded
R	Seasonal - Tidal
S	Temporary - Tidal
T	Semipermanent - Tidal
V	Permanent - Tidal

WATER CHEMISTRY MODIFIERS

Coastal Salinity

1	Hyperhaline
2	Euhaline
3	Mixohaline (Brackish)
4	Polyhaline
5	Mesohaline
6	Oligohaline
0	Fresh

Inland Salinity

7	Hypersaline
8	Eusaline
9	Mixosaline
0	Fresh

pH Freshwater

a	Acid
t	Circumneutral
l	Alkaline

**Not included in "Classification of Wetlands and Deepwater Habitats of the United States." Created specifically for National Wetland Inventory mapping Effort.

OTHER MODIFIERS

Special

b	Beaver
d	Partially Drained/ Ditched
f	Farmed
h	Diked/Impounded
r	Artificial
s	Spoil
x	Excavated

Soils

q	Organic
n	Mineral

Statement to Users: The overlays/maps were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with "Classification of Wetlands and Deepwater Habitats of the United States." The aerial photographs typically reflect conditions during the specific year and season when they were taken. In additon, there is a margin of error inherent in the use of aerial photographs. Thus, a detailed on-the-ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In additon, some small wetlands and those obscured by dense forest cover may not be included on this map. Federal, State, and local regulatory agencies with jurisdictions over wetlands may define and descirbe wetlands in a different manner than that used in this Inventory, There is no attempt, in either the design or products of this Inventory, to define the limits of proprietary jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs and proprietary jurisdictions that may affect such activities.

To Order NWI Topical Wetland Overlays/Maps: A National Wetland Inventory Order Form is required and can be obtained by writing to the address on the letterhead.